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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,467	12/17/2001	Ali Keshavarzi	10559-678001 / P13211	6174

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EXAMINER

SPEARS, ERIC J

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,467

Applicant(s)

KESHAVARZI ET AL.

Examiner

Eric J Spears

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 17-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 10-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-15, drawn to Method/Apparatus for Adjusting Threshold, classified in class 250, subclass 214.1.
- II. Claims 16-24, drawn to Digital Output Apparatus, classified in class 250, subclass 214SW.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as a radiation sensor used with a low voltage bias. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Samuel Borodach on 6/5/2003 a provisional election was made without traverse to prosecute the invention of Method/Apparatus for Adjusting Threshold, claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-24 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, line 3 recites the limitation "the CMOS radiation sensor". There is insufficient antecedent basis for this limitation in the claim.

Regarding Claim 6, the claim recites an "integrated voltage source" on lines 2-3. It is unclear, however, what the voltage source is integrated with. Therefore, the claim will be examined as reciting that the voltage source is integrated into a single unit.

Claim Objections

Claim 10 is objected to because of the following informalities: line of the claim should include language such as "further" before "comprising". Appropriate correction is required.

Claims 8 and 9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

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Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The recitation of the CMOS radiation measuring circuit does not further limit the claim elements of Claim 7.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Lin et al. (2001/0019285).

Regarding Claims 1 and 3, Lin teaches adjusting a threshold level of a transistor, which would be affected by high radiation levels, by applying a voltage between the source and body of the transistor and taking an output (See Abstract; See Fig. 3).

Regarding Claims 2 and 4, a transistor as taught in Lin would be exposed to radiation constantly unless it were heavily shielded.

Regarding Claims 5 and 6, Lin teaches adjusting the bias using a voltage source 160 which is external to the radiation sensor and integrated into single unit.

Regarding Claim 7, Lin teaches a radiation sensor 110, and an adjustable voltage source (160, 170) coupled to the radiation sensor to change the threshold of the sensor (See abstract; See Fig. 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (2001/0019285).

Regarding Claims 8 and 9, Lin teaches adjusting the bias using a voltage source (160, 170), which is external to the radiation sensor. Lin teaches the use of MOS circuitry. Lin does not teach the sensor being apart of a CMOS circuit. However, the use of complementary metal oxide semiconductor circuitry is well known in the art. Therefore, it would have been well known in the art to provide CMOS circuitry in the device of Lin, as the use of such a semiconductor is well known in the art, in order to provide a cheaper, more readily available, more versatile electronics.

Further regarding Claim 9, Lin does not teach the voltage source being integrated into the CMOS circuit. However, it would have been obvious to one of ordinary skill in the art to integrate the voltage source with the CMOS circuit, since it has

been held that forming in one piece an article has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Allowable Subject Matter

Claims 10-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: regarding Claim 10, the prior art of record fails to teach or reasonably suggest an apparatus, in addition to the other related features of the claim and any claim it depends therefrom, a current mirror arranged as recited in Claim 10, lines 3-7.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kindt et al. (6,388,494) teaches changing the threshold of a transistor with an applied voltage.

Morcom (5,694,448) teaches an imaging apparatus.

Voldman (6,404,269) teaches a dynamic threshold mosfet.

Thomson (4,678,916) teaches radiation effects on transistor thresholds.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Spears whose telephone number is (703) 306-0033. The examiner can normally be reached on Monday-Friday from 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (703) 308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

EJS
06/08/03


STEPHONE ALLEN
PRIMARY EXAMINER